

REMARKS

Applicant submits that the present application, as currently amended, is in condition for allowance.

Claims 1, 3-4, 7-21, 24-27, 29-38, 40-44 and 46-49 are now present in this application. Claims 1, 4, 8, 10, 11-13, 18-20, 29-38, 40-44 and 46-49 are amended, and claims 2, 5-6, 22-23, 28, 39, 45 and 50 are cancelled without prejudice or disclaimer. Claims 1, 8, 10, 20, 29, 33, 40, and 46 are independent.

In the Official Action, claims 1, 3, 14 and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh et al. (WO 98/14938 and equivalent US patent 6,292,625) in view of Krakirian (US Patent 5,504,868), and claims 4, 7-13, 16-21, 24-27, 29-38, 40-44 and 46-49 were rejected under 35 U.S.C 103(a) as being unpatentable over Gotoh and Krakirian in view of Fukushima et al. (US Patent 5,237,553).

Claims 1, 4, 8, 10, 11-13, 18-20, 29-38, 40-44 and 46-49 are amended to more clearly describe and distinctly claim Applicant's invention. No new matter is added.

Briefly recapitulating, amended claim 1 is directed to

A method for managing a defective data block of a recording medium, the method comprising:

receiving a write command for data recording, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and write type information for indicating whether or not the real time recording is required, wherein the write command comprises 12 bytes of information including the logical block address of 4 bytes, the transfer length information of 4 bytes and the write type information of 1 bit among 1 byte;

determining whether to replace a defective data block with a spare area of the recording medium based on the write type information;

replacing the defective data block with the spare area of the recording medium when the write type information indicates that the real time recording is not required, while not replacing the defective data block with the spare area of the recording medium when the write type information indicates that the real time recording is required, as a result of the determination; and

generating a defect list including indication information, *the indication information being dependent on the write type information*,

wherein *the indication information indicates* that the defective data block is not replaced with the spare area *when the write type information indicates* that the real time recording is required, *and alternatively, indicates* that the defective data block is replaced with the spare area *when the write type information indicates* that the real time recording is not required.

Amended independent claim 8 is directed to

A method for managing a defective data block of a recording medium, the method comprising:

receiving a write command for data recording, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and a *write type information to indicate that real time data recording is required*, wherein the write command comprises twelve bytes of information including the write type information of 1 bit among 1 byte;

determining the recording position in the recording medium, the amount of data and the real time recording respectively based on the write command;

controlling the recording of the data such that an optical pickup does not jump to a spare area of the recording medium to replace a defective data block ;
and

recording a defect list on the recording medium, the defect list including an *indication information to indicate* that the defective data block is not replaced with the spare area *when the write type information indicates* that the real time data recording is required,

the indication information being different from the write type information and type of the recoded data but *dependent on the write type information*.

Amended independent claim 10 is directed

A system for managing a defective data block of a recording medium, the system comprising:

a recording/reproducing device configured

to receive a write command for real time recording and record data on the recording medium, the write command comprising a logical block address information to designate a recording position, a transfer length information to identify an amount of data to be recorded and *write type information to indicate that real time data recording is required*, the write command comprising twelve bytes of information that includes the write type information of 1 bit among 1 byte, and

to perform the recording operation to not replace the defective data block with a spare area of the recording medium during the real time recording, and record a defect list on the recording medium, the defect list including an *indication information to indicate* that the defective data block is not replaced *when the write type information indicates* that the real time data recording is required,

the indication information being different from the write type information and type of the recorded data but *dependent on the write type information*; and

a host device, operatively coupled to the recording/reproducing device through interface, configured to transmit the write command to the recording/reproducing device, and to control the recording/reproducing device to record the data according to the write command,

wherein the recording/reproducing device is configured to recognize the write command received from the host device to perform the recording operation in response to the write command and determine the recording position in the recording medium, the amount of data and the real time recording respectively based on the write command.

Amended independent claim 20 is directed to

A method for managing a defective data block of a recording medium, the method comprising:

receiving a write command for real time recording, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and *write type information to indicate that real time data recording is required*, wherein the

write command comprising 12 bytes of information including the write type information of 1 bit among 1 byte;

performing a recording operation of the data in such a manner that a defective data block is not replaced with a spare area of the recording medium, during the real time recording; and

storing an identification information to indicate that the defective data block is not replaced with a spare area *when the write type information indicates that the real time data recording is required*,

the identification information being different from the write type information and type of the recorded data but *dependent on the write type information*.

Amended independent claim 29 is directed to

An apparatus for managing a defective data block, comprising:

an optical pickup configured to record data on the recording medium; and

a controller configured

to receive a write command for recording data, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and a *write type information to indicate that real time data recording is required*, the write command comprising 12 bytes of information that includes the write type information of 1 bit among 1 byte,

to determine the recording position in the recording medium, the amount of data and the real time recording respectively based on the write command,

to control the optical pickup to record the data such that the optical pickup does not jump to a spare area to replace a defective data block to a spare area of the recording medium, and

to create a defect list on the recording medium, the defect list including an *indication information to indicate* that the defective data block is not replaced with the spare area *when the write type information indicates* that the real time data recording is required,

the indication information being different from the write type information and type of the recoded data but *dependent on the write type*

information.

Amended independent claim 33 is directed to

An apparatus for managing a defective data block, comprising:

a recording/reproducing unit configured to record data on the recording medium; and

a controller configured

to receive a write command to record data, the write command comprising a logical block address to designate a recording position, a transfer length information to identify an amount of data to be recorded and *write type information to indicate whether real time data recording is required*, the write command comprising 12 bytes of information that includes the write type of information of 1 bit among 1 byte,

to perform a recording operation of the data in such a manner that a defective data block is not replaced with a spare area of the recording medium *when the write type information indicates that the real time recording is required* while the defective block is replaced with the spare area of the recording medium when the write type information indicates that the real time recording is not required, and

to create an *indication information to indicate* whether or not the defective data block is replaced with a spare area *according to a value of the write type information*,

the indication information being different from the write type information and type of the recorded data but *dependent on the write type information*.

Amended independent claim 40 is directed to

A system for managing a defective data block, comprising:

a recording/reproducing device configured to record data to a recording medium, the recording/reproducing device being configured

to receive a write command, the write command including a logical block address to designate a recording position in the recording medium, a transfer length information to identify an amount of main data to be recorded and a *write type information to identify whether the real time recording is required*,

to determine whether to replace a defective data block with a spare area of the recording medium based on at least the write type information, and

to record a defect entry including indication information on the recording medium, the *indication information indicating* whether or not the defective data block is replaced with a spare area *according to a value of the write type information*; and

a host device, operatively coupled to the recording/reproducing device through an interface, and configured to control the recording of data, the host device being configured to transmit the write command and the data to be written to the recording/reproducing device through the interface,

the write command comprising 12 bytes of information, which includes the logical block address of 4 bytes, the transfer length information of 4 bytes and the write type information of 1 bit among 1 byte,

wherein the recording/reproducing device is configured

to recognize the specified write command to determine at least the write type, and

to perform the recording operation such that the defective data block is not replaced with the spare area of the recording medium when the write command identifies that the real time recording is required, while the defective data block is replaced with the spare area of the recording medium when the write command identifies that the real time recording is not required.

Amended independent claim 46 is directed to

An apparatus for managing a defective data block, comprising:

a recording/reproducing unit configured to record data to a recording medium; and

a control unit, operatively coupled to the recording/reproducing unit, configured

to control the recording of data,

to receive a write command, the write command including a logical block address to designate a recording position in the recording medium, a transfer length information to identify an amount of main data

to be recorded and a *write type information to identify whether the real time recording is required*, and

to determine whether to replace a defective data block with a spare area of the recording medium based on the write command, and

to control the recording/reproducing unit according to the determination, the write command comprising 12 bytes of information, which includes the logical block address of 4 bytes, the transfer length information of 4 bytes and the write type information of 1 bit among 1 byte,

to recognize the specified write command to determine at least the write type,

to control the recording/reproducing unit such that the defective data block is not replaced with the spare area of the recording medium *when the write command identifies that the real time recording is required*, while the defective data block is replaced with the spare area of the recording medium when the write command identifies that the real time recording is not required, and

to generate a defect entry including indication information, the indication information indicating whether or not the defective data block is replaced with the spare area according to a value of the write type information.

Gotoh describes a recording method for recording an AV file, including:

determining whether or not input data is AV data;

detecting a defective sector existing in a data recording area assigned for recording the input data;

when it is determined that the input data is the AV data and a defective sector is detected in the data recording area, allocating a defective extent including the defective sector;

recording the AV data in continuous sectors while skipping the defective extent; and

allocating an area of continuous sectors where only the AV data is recorded as one AV extent, wherein an AV file is recorded on the information recording disk,

wherein the AV file includes:

a defective extent, which includes, when a defective sector is included in the data recording area, the defective sector; and

one or more AV extents each including a plurality of continuous sectors.

Krakirian describes a SCSI command descriptor block parsing state machine that writes information from corresponding field six-byte, ten-byte and twelve-byte SCSI command descriptor blocks into the same register of a set of registers. For example, bytes 4, 8 and 9 contain the low byte of the transfer length field of six-byte, ten-byte and twelve-byte command descriptor blocks, respectively, yet a command descriptor block parsing state machine places the low byte of the transfer length field into the same single-byte register regardless of whether the command descriptor block is a six-byte, ten-byte or twelve-byte command descriptor block.

As a first point of order, Applicant notes that the Official Action acknowledges that Gotoh fails to disclose or suggest Applicant's claimed write type information having a length of 1 bit among 1 byte. However, the Official Action alleges a) that the Applicant's claimed write type information having a length of 1 bit among 1 byte is suggested by steps A1 and A3 of Fig. 1 of Gotoh; and b) is suggested by col. 14, line 51 – col. 15, line 9 of Krakirian. Applicant traverses.

First, Applicant concurs with the finding in the Official Action that Gotoh does not disclose or suggest a write command comprising 12 bytes of information. Thus, because Gotoh does not disclose or suggest a write command comprising 12 bytes of information, Gotoh does not disclose or suggest a write command comprising 12 bytes of information *which includes the* write type information of 1 bit among 1 byte.

Second, steps A1 and A3 of Fig. 1 of Gotoh disclose that a decision is made to record by a conventional method (step A1) and that a decision is made to perform real time recording (step A3). Indeed, Gotoh describes that the determination of step A1 is based on the type of command sent from the host, the mode in which data is transferred from the host, or the like. For example, when Write_AV command is sent for recording AV data, it is determined to be AV data, while it is determined to be normal computer data when normal Write command is sent. Gotoh does not describe that the type of command (e.g., the Write_AV command) is 1 bit among 1 byte. Furthermore, Gotoh describes that step A3 decides a) to use real time recording based on determining when the synchronous mode is set as the data transfer mode from the host computer to the recording apparatus; and b) to use non-real time recording when the asynchronous mode is set. Alternatively, step A3 determines a) to use real time recording when the data is transferred from a digital video movie, or the like, based on the type of equipment connected to the recording apparatus; and b) to use non-real time recording when the data is transferred from network equipment such as those used for the internet. Gotoh does not describe that the scenario based decision of step A3 is based on a command of 1 bit among 1 byte. Thus, it is clear that Gotoh does not disclose or suggest a write command comprising 12 bytes of information which includes the write type information of 1 bit among 1 byte.

Third, the cited passage of Krakirian does not directly or indirectly cure the deficiencies of Gotoh. The cited passage of Krakirian describes that a bit NORMWR of register HSTAT0 (0Ch) must be set indicating that the command is a predetermined type of write command, for example, a "normal write command." However, Krakirian explicitly teaches away from Applicant's claimed write command comprising 12 bytes of information which includes the

write type information of 1 bit among 1 byte by reciting that "[t]here are no "normal write commands" in the twelve-byte command format. Accordingly, if the command received comprises twelve bytes, the command is not a normal write." That is, in the 12 byte command of Krakirian, there is no inclusion of write type information of 1 bit among 1 byte.

Applicant acknowledges that one or more flag bits are included only in the six-byte command, or the ten-byte command of Krakirian. However, the six and ten byte commands of Krakirian are not 12 byte commands, let alone a write command comprising 12 bytes of information, which includes the write type information of 1 bit among 1 byte.

Fukushima does not cure the deficiencies of Gotoh and Krakirian. For these reasons alone, Applicant submits that the inventions recited in independent claims 1, 8, 10, 20, 29, 33, 40, and 46 patentably define over the prior art.

Furthermore, because none of the references disclose or suggest write type information of 1 bit among 1 byte, Applicant submits that none of the applied references disclose or suggest Applicant's claimed features of

generating a defect list including indication information, *the indication information being dependent on the write type information*, wherein *the indication information indicates* that the defective data block is not replaced with the spare area *when the write type information indicates* that the real time recording is required, *and alternatively, indicates* that the defective data block is replaced with the spare area *when the write type information indicates* that the real time recording is not required (as recited in amended claim 1);

recording a defect list on the recording medium, the defect list including an *indication information to indicate* that the defective data block is not replaced with the spare area *when the write type information indicates* that the real time data recording is required, *the indication information being* different from the write type information and type of the recoded data but *dependent on the write type information* (as recited in amended claim 8);

defect list including an *indication information to indicate* that the

defective data block is not replaced *when the write type information indicates that the real time data recording is required, the indication information being different from the write type information and type of the recoded data but dependent on the write type information* (as recited in amended claim 10);

storing an identification information to indicate that the defective data block is not replaced with a spare area *when the write type information indicates that the real time data recording is required, the identification information being different from the write type information and type of the recorded data but dependent on the write type information* (as recited in amended claim 20);

controller configured... to create a defect list including an *indication information to indicate* that the defective data block is not replaced with the spare area *when the write type information indicates* that the real time data recording is required, *the indication information being different from the write type information and type of the recoded data but dependent on the write type information* (as recited in amended claim 29);

controller configured to...to create an *indication information to indicate* whether or not the defective data block is replaced with a spare area *according to a value of the write type information, the indication information being different from the write type information and type of the recoded data but dependent on the write type information* (as recited in amended claim 33);

recording/reproducing device configured...to record a defect entry including indication information on the recording medium, the *indication information indicating* whether or not the defective data block is replaced with a spare area *according to a value of the write type information* (as recited in amended claim 40); and

control unit configured...*to generate a defect entry including indication information, the indication information indicating* whether or not the defective data block is replaced with the spare area *according to a value of the write type information* (as recited in amended claim 46).

Thus, for another reason, Applicant submits the claimed inventions patentably define over the applied references.

Finally, the Official Action relies on Fukushima to show the defect list including indication information to indicate that the defective data block is not replaced to the spare area. Applicant traverses. Indeed, Fukushima describes a data recording medium having a sequential

access zone consisting of a data area for recording real time data, a C list area for recording a C defect list managing defective sectors detected in the formatting process and a G list area for recording a G defect list managing defective sectors detected in the recording process are allocated a random access zone consisting of a data area for recording random access data, a spare area for replacing defective sectors detected in the recording process and an R list area for recording an R defect list managing the relationship between the defective sectors and corresponding spare sectors, and a volume control area for recording a volume control block having control data of each area are also allocated.

However, Fukushima merely discloses a replacement sector address in either of the C and G defect lists. As noted above, Fukushima fails to disclose Applicant's claimed "indication information dependent on the write type information." Accordingly, Fukushima fails to disclose Applicant's claimed "defect list including indication information, *the indication information being dependent on the write type information.*"

As none of the cited art, individually or in combination, discloses or suggests at least the above-noted features of independent claims 1, 8, 10, 20, 29, 33, 40, and 46, Applicant submits the inventions defined by independent claims 1, 8, 10, 20, 29, 33, 40, and 46, and all claims depending therefrom, are not rendered obvious by the asserted references for at least the reasons stated above.¹

¹ MPEP § 2142 "...the prior art reference (or references when combined) must teach or suggest **all** the claim limitations.

Conclusion

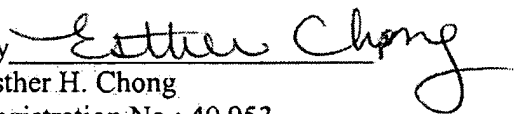
In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Michael E. Monaco, Reg. No. 52,041, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

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Respectfully submitted,

By 
Esther H. Chong
Registration No.: 40,953
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicants